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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,510	06/09/2005	Hiroyoshi Matsumura	2004_1805A	3159

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

RAHLL, JERRY T

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/538,510	Applicant(s) MATSUMURA ET AL.	
	Examiner Jerry T. Rahll	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to because the shading in Figures 1-4 is not clear and uniform. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 11-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,594,419 to Ukrainczyk.

5. Regarding independent Claim 11, Ukrainczyk describes an optical fiber (30) and at least one GRIN lens (28) fusion spliced to an end of the optical fiber. While Ukrainczyk does not specifically describe the numerical aperture of the GRIN lens as larger than that of a light emitting sources, light sources with very small apertures (less than that of a GRIN lens as described by Ukrainczyk) are well-known in the art. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use such a small numerical aperture light emitting source with the fiber structure of Ukrainczyk. The motivation for doing so would have been to transmit an optical signal to a system including the fiber.

6. Regarding independent Claim 16, Ukrainczyk describes an optical fiber (30), a first GRIN lens (28) and a second GRIN lens, spliced to the fiber and the first lens. Ukrainczyk does not specifically describe the numerical aperture of the first lens as larger than the numerical aperture of the second GRIN lens. At the time of invention, it would have been obvious to one of ordinary skill in the art to use lenses have numerical apertures in such a relation, since it has

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been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

The motivation for doing so would have been to ensure transmission of an optical signal into the fiber of Ukrainczyk.

7. Regarding Claims 12, 18, and 21, Ukrainczyk does not describe the numerical aperture of the GRIN lens as 0.43. However, it would have been obvious to one of ordinary skill in the art at the time of invention to use such a combination, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The motivation for doing so would have been to ensure transmission of an optical signal into the fiber of Ukrainczyk.

8. Regarding Claims 13, 14, 20, 23, and 26-28, Ukrainczyk does not describe the GRIN lens having a coefficient of thermal expansion as $15 \times 10^{-7} \text{K}^{-1}$ or less. However many materials used for lenses have such thermal qualities. It would have been obvious to one of ordinary skill in the art at the time of invention to use such a low coefficient of thermal expansion material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. The motivation for doing so would have been to ensure a good fusion joint.

9. Regarding Claims 15 and 29, Ukrainczyk describe the fiber (30) as a single mode fiber.

10. Regarding Claim 17, Ukrainczyk does not specifically describe the numerical apertures of the first lenses, fiber and light source having the relationship presently claimed. At the time of invention, it would have been obvious to one of ordinary skill in the art to use lenses have numerical apertures in such a relation, since it has been held that where the general conditions of

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a claim are disclosed in the prior art, discovering the optimum workable range involves only routine skill in the art. In re Aller, 105 USPQ 233. The motivation for doing so would have been to ensure transmission of an optical signal into the fiber of Ukrainczyk.

11. Regarding Claims 19, 22, and 24, Ukrainczyk does not specifically describe the dimensional qualities of the first GRIN lens having the relation presently claimed. At the time of invention, it would have been obvious to one of ordinary skill in the art to use lenses have numerical apertures in such a relation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum workable range involves only routine skill in the art. In re Aller, 105 USPQ 233. The motivation for doing so would have been to ensure transmission of an optical signal into the fiber of Ukrainczyk.

12. Regarding Claim 25, Ukrainczyk does not specifically describe the length of the second GRIN lens as presently claimed. At the time of invention, it would have been obvious to one of ordinary skill in the art to use lenses have numerical apertures in such a relation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum workable range involves only routine skill in the art. In re Aller, 105 USPQ 233. The motivation for doing so would have been to ensure transmission of an optical signal into the fiber of Ukrainczyk.

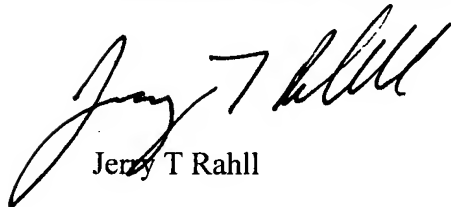
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T. Rahll whose telephone number is (571) 272-2356. The examiner can normally be reached on M-Th (8:30-5:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jerry T Rahll



MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER